

### The Fuel Line - Fuel Filtration Information for Standby Generators

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#### Diesel Fuel Maintenance Program

New generator services and products offered by ASNE:

- [Comprehensive Generator Diesel Fuel Testing](#)
- [Fuel Restoration Tank Cleaning](#)
- [Permanently Installed Fuel Cleaning Systems](#)

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ASNE has recently added [diesel fuel polishing and conditioning equipment and services](#) to our offerings. Whether you install a permanently affixed system or utilize our fuel polishing services, we can tailor our program to meet your needs of a well established fuel maintenance program. This newsletter will give you the information you need to make informed decisions on maintaining the fuel you use in your emergency generator.



#### Generac's Stance on a Diesel Fuel Maintenance Program

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Regardless of the fuel type, there is also the question of storage. Diesel generators tend to store fuel much longer than other applications, and this can cause severe problems. Normally, once diesel fuel leaves the refinery, it is combusted in an engine within 18 to 24 days. Because of this, oil companies are not concerned with producing a diesel fuel that is capable of being stored for long term. NFPA refers to diesel fuel storage life at 1-1/2 to 2 years, but that recommendation was written in the 1980's. Due to the increased demand for fuel, oil companies today are now refining 85% more of each barrel of crude than they were in the early 80's. The result is poorer stability characteristics and a fuel more susceptible to biological contamination.

There are four simple steps that need to be put in place to assure clean fresh fuel for the generator prime mover and they are:

1. Draw fuel samples annually and send to an accredited laboratory for testing for existing particulate and stability using ASTM test methods.
2. Add a biocide to the fuel to control microbial growth.
3. Use one of a variety of chemical additives available that increase diesel fuel stability. The fuel supplier should be aware of their availability.
4. Remove water and sediment by filtering

A scheduled maintenance program of stored diesel fuel for an emergency power system is absolutely necessary for the proper operation of the system. When the power goes out, it's too late to clean the fuel.

For the latest information and or changes, refer to the specific O&M Manual.

Generac Power Systems, Inc.  
0184240SSD Rev 1, 9/15/09, 5/6/10

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This method is commonly called "Clear and Bright ". This test method covers two procedures for estimating the presence of free water and solid particulate contamination. Both procedures can be used as field tests at storage temperatures or as a laboratory test at controlled temperatures.

Procedure 1 provides a rapid pass/fail method for contamination. Procedure 2 provides a gross numerical rating of haze appearance.

### **Summary of Test Method**

In procedure 1, approximately 900 mL of fuel is placed in a clear glass jar and is examined visually for clarity. The sample is then swirled and examined for visual sediment or water drops below the vortex.

In procedure 2, approximately 900 mL of fuel is placed in a clear glass jar and is examined visually for clarity. Fuel clarity is rated by placing a standard bar chart behind the sample and comparing its visual appearance with the standard haze rating photos. The sample is then swirled and examined for visual sediment or water drops below the vortex.

When field sampling, both Procedures 1 and 2 and performed immediately after sampling and at current storage temperature conditions.

### **Reporting**

Procedure 1 - The results of the test shall be shown as pass if: (a) The sample has been found to be clear and bright on visual observance and (b) If there is no water or particulates observed at the bottom of the vortex. The results shall be reported as failed if (a) or (b) are not met. The reason for ant failure may also be recorded.

In addition to the pass/fail reporting requirements, the individual sample qualities may be reported as follows:

Clear and Bright - Pass or Fail

Free Water - Pass (absent) or Fail (present)

Particulates - Pass (absent) or Fail (present)

Procedure 2 - The report shall include the numerical rating of the sample and a note as to whether any particles or water droplets were found on the bottom of the sample container. Any special or unusual observations, such as darker than usual fuel color, shall also be reported.

*Note:* Procedure 1 - It is not practical to specify the precision of the procedure because the test is a pass/fail test, not a quantitative measurement.

**This is a quick field test to determine if there are fuel degradation issues.**



Diesel fuel filter comparison - before and after fuel cleaning

## Smithfield High School Smithfield, Rhode Island

Smithfield High School understood the need to have a stand by generator of sufficient size to protect their critical systems in case of a power failure. They also understood that diesel fuel is naturally unstable and needed to be maintained.

Smithfield High installed a 500kW Generac generator with an Algae-X STS-6000-SX fuel maintenance system plumbed into their sub-base tank.



## Large IT Company

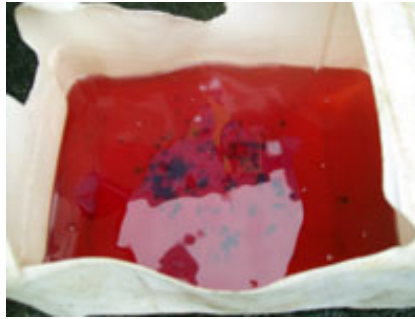
### Reston, Virginia

A large IT company designs, builds and manages mission-critical environments for businesses who have no room for error. It is for that reason that they purchased from ASNE and had installed an Algae-X Smart FPS-LXF system on each of their 2Meg Cummins generator sets to ensure generator reliability.



## Telecommunications Company

While having a PM performed on a generator at one of the central offices, a fuel sample was taken and determined to be high in particulate content as evidenced by a visual



determination. To ensure that none of their customers lost their services, the company is having all of their generator set fuel tanks polished across the United States. ASNE, in conjunction with [Diesel Fuel Doctor](#), have taken on the process of polishing over 21,000 gallons of fuel across a 12 state area from California to Texas to Illinois to New England. Both companies will be utilizing the Algae-X MTC-1000 and MTC-3000 systems to complete this task.

## Large Data Center Andover, MA

Upon completion of polishing these tanks, the company determined that a permanently installed system was merited. ASNE partnered with [Electronic Environments Corporation](#), their sister company, to install an Algae-X STS-6000-10GPM-2T system that will maintain the fuel in both tanks utilizing the one system. The Data Center has two - 15,000 gallon underground storage tanks to provide fuel to their five 1Meg CAT generators providing back up power. Again, another mission-critical oriented company that understands the need for reliable electricity should a power failure occur. ASNE utilized an Algae-X MTC-1000 along with treating the fuel



with Algae-X's AFC-705 Fuel Catalyst to bring the fuel back within ASTM standards.

As you can see, ASNE has shown just how important fuel quality is to a myriad of customers. Those customers have agreed that a proper [fuel testing and maintenance program](#) can benefit themselves and those that they serve and that ASNE has the program and systems to meet their needs.

**[Contact us today](#) to learn how ASNE can help you test and maintain your diesel fuel systems - 888.890.9886 or [sales@asne.com](mailto:sales@asne.com)**

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